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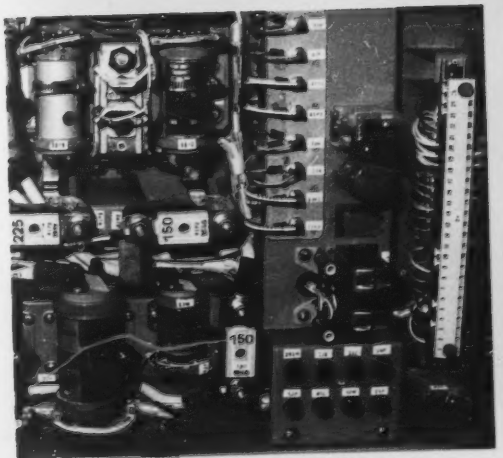
Business and commercial Aviation

Gates Learjet Gears for the Future



Simplifying Electrical Systems

King's KFC 400

Contents

September 1986

Editorial ____ 11
You and Recurrent Training: You may believe in recurrent training, but do you practice it regularly? Some soul-searching may be in order.

Letters ____ 14
Rethinking ATC System Design Criteria; Breaking the Ice Together?

Intelligence ____ 19
General Aviation Safety Parallels 1985 Record; Operators Expected To Oppose Large N Number Proposal

Reflections ____ 41
Cessna's First (and Last) Helicopter: The Cessna Skyhook fell victim to the same illness that has destroyed many a good idea—high cost.

Gates Learjet Gears for the Future ____ 48

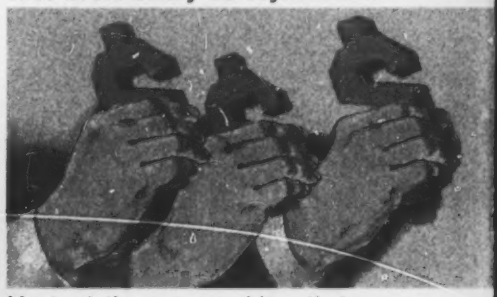
This manufacturer's new leadership, plus several rational decisions, bode well for the company's comeback.

King Introduces KFC 400 Digital Flight Control System ____ 56

Operators of heavy turboprops and light jets (and even the CEO) will appreciate the smooth performance of King's latest avionics offering.

NBAA 1986: Changing of the Guard ____ 64
The NBAA annual convention is just one way that the association shows the strength of business aviation, the goals of which soon will be entrusted to a new president.

1986 B/CA Salary Survey ____ 76



Most aviation personnel love their work; their complaints have mostly been about their salaries. According to our survey, their salaries are on the rise!

Scheduling Corporate Aircraft and Crews ____ 86
If it's essential for you to *have* a crew to schedule, then you might want to consider the positive effects of an advance schedule that includes "real" time off.

CLEARANCE DELIVERY

A managing editor must have many talents, the most obvious of which are organizational skills, a knowledge of writing and production, and a detailed understanding of the magazine's particular field. Today's managing editor, however, also must be quite knowledgeable with respect to computers and electronic processing of editorial material. B/CA is fortunate to have Jessica Salerno, who possesses all the attributes needed in a managing editor and then some.

Jessica has been with our magazine continuously since 1978 and previously held the position of production editor from 1969 to 1972, during a time when B/CA was located in New York City. She rejoined B/CA six years later as our research editor, and was responsible for data collection and analysis pertaining to B/CA's *Planning and Purchasing Handbook*, our annual salary survey and many other articles. She assumed her present position of managing editor with B/CA's February 1982 issue.

In addition to serving as an internal consultant to Murdoch Magazines regarding electronic typesetting, her activities include processing editorial material for B/CA's ancillary programs, such as the *FBO Information Pack* and

Mods in a Changing Market 100
In that sales of new aircraft are slow, one might reasonably expect that business would be booming for modification centers. But it's not exactly booming.

Bogus Aircraft Revisited 118
Most reputable aircraft repair facilities claim that the Federal regulations are followed precisely. They say that "bogus" only describes the accusations of others.

Human Factors Engineering 124
These specialists are discovering the particulars of the synergy that exists in every cockpit and upon which flight depends.

Mandatory Turboprop Type Ratings? 130
Time spent at the Beechcraft Training Center getting type rated in the Model 300 proved to be very informative.

Simplifying Electrical Systems 136
Having problems understanding the functions of amperage, voltage, electrical buses, wires, switches, circuits and circuit breakers? Well, you're not alone.

Sophisticated Training for Business Pilots 145
Business pilots and good training are *not* mutually exclusive facets of aviation; indeed, the search for good training is well worth any effort you might expend.

AIRMANSHIP
Easy Cruise: The Cloak of Complacency 150
The statistics on the percentage of accidents that occur in takeoff and landing can cleverly disguise level cruise as a "safety zone."

Taxes & Accounting 158
Scanty Shelter

Point of Law 160
Banks Always Win

Fit for Flight 162
Human Hydraulics

Cause & Circumstance 166
Look Before Crossing

Product Analysis 168
The Incredible HUC

B/CA Observer 176
Bonanza Joins the Jet Set

Calendar 198

Washington 202
NBAA's John Winant

Hardware/Software 204
EMI Matures With Market

Greenhouse Patter 206
People: Express/Courageous/Retiring

Marketplace 205

Advertisers' Index 190

B/CA's *Show Dailies*. And as busy as she is, Jessica still authors an occasional feature article, all of which makes this very capable woman a very valuable member of the B/CA team.

THE COVER
The photo of the Gates Learjet 55 and the picture for the electrical system feature were taken by Staff Editor Alan Staats. King/Bendix supplied the KFC 400 DFCS photo.

Business and commercial Aviation

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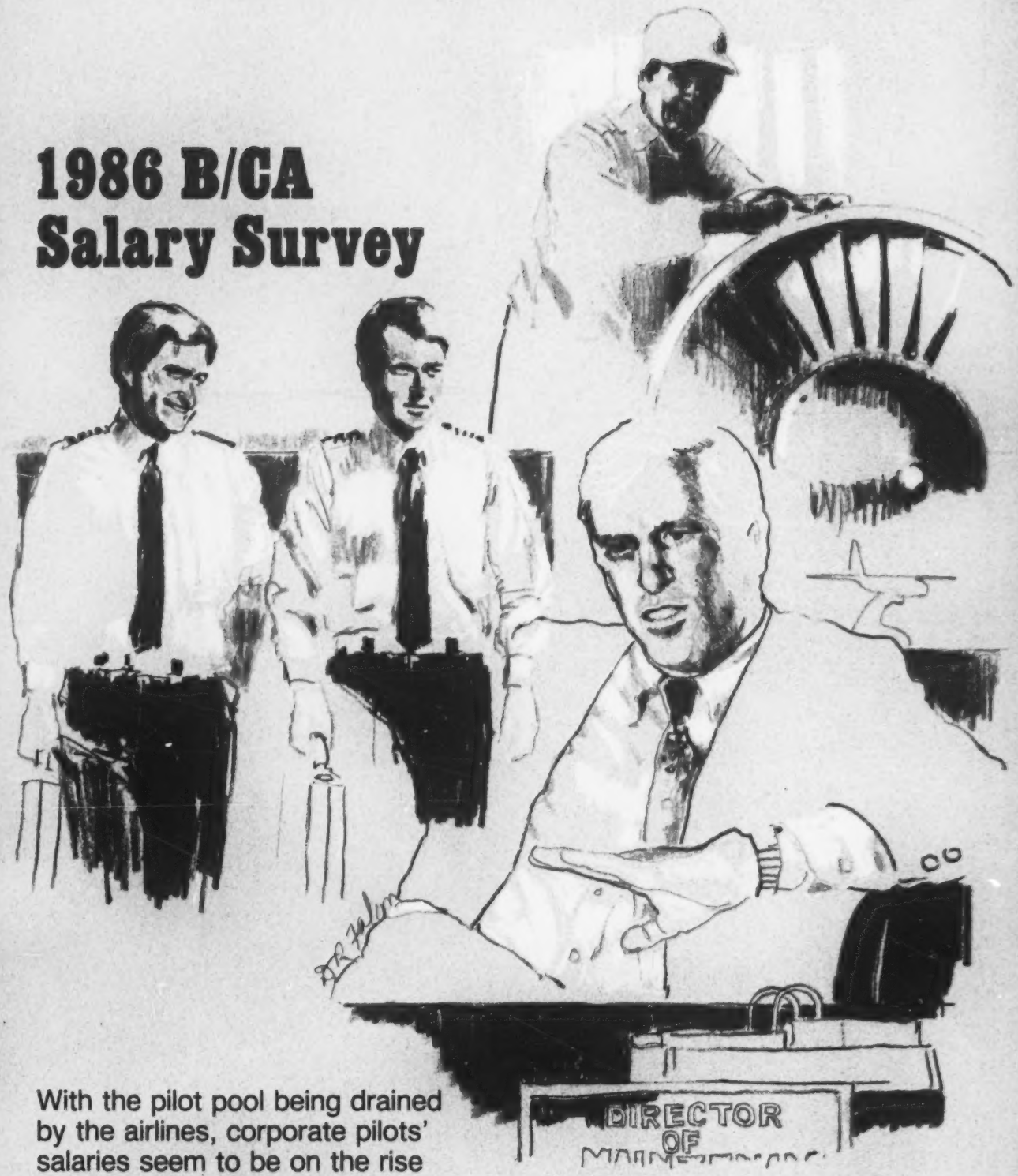
1986 B/CA Salary Survey



With the pilot pool being drained by the airlines, corporate pilots' salaries seem to be on the rise as good pilots become scarce.

B/CA Staff Report

According to B/CA's recent survey of U.S. flight departments, the salaries of aviation department managers, chief pilots, line pilots and maintenance personnel have increased substantially over 1985 figures.

In last year's survey (B/CA, August 1985, page 48), we reported average increases of 5.2 percent over 1984's reported median salaries. This year we have discovered that the average increase in median salaries for pilots and maintenance personnel in all classes is approximately 6.1 percent over 1985's reported median figures.

Inflation, or what there is of it, no longer seems to be a major factor when salary increases are considered. Based on the Consumer Price Index for 1985, the inflation rate was reported to be 3.5 percent. At press time, inflation was running at a 1.7-percent rate for the year to date. So, since our survey group's median salary increases were averaging 6.1 percent over 1985, pilots would seem to be ahead of the game.

In response to the many requests we have had over the past year, we have added a new category to this year's survey: flight department manager. Traditionally, we have included these salaries under the chief pilot category. However, as flight departments become more sophisticated, and add equipment and personnel, overall management responsibility falls to the flight department manager. Therefore, a separate category seemed appropriate. We have attempted to qualify this category as much as possible, listing the number of aircraft, the fleet mix and the number of pilots.

Benefits

B/CA's sample group has seen very little change in employe benefits over the past year. Major medical, long-term disability, life insurance and even dental insurance are offered by more than 95 percent of the flight departments surveyed. Company cars are few and far between; however, many of the larger corporate flight departments have "department" cars or vans that are used to pick up and deliver parts, people or whatever.

Loss - of - license insurance still remains the one employe benefit that very few flight departments offer. As we found last year and again this year, many companies are opting for a comprehensive long-term disability policy and/or an internal retraining program. In most cases where loss-of-license insurance existed, premiums were paid by the employe.

Flight- and duty-time averages were not requested for this year's survey. However, in order to help managers and chief pilots better understand what their requirements might be in the area of scheduling pilots, we are including a comprehensive feature on the subject on page 86 of this issue.

As always, the B/CA "Salary Survey" is meant to be a management tool. When budgeting flight department salaries, keep in mind that the figures reported in our charts are just that—"reported." B/CA's accuracy is considered to be plus or minus five background color percent of the median salaries that are listed in the charts. **B/CA**

Comparative Salaries 1985/1986

	1985	1986	% Increase (Decrease)
Heavy Jet (over 35,000 lb)			
Chief Pilot	$63,067	$66,000	4.65
Captain	49,943	51,395	2.90
Copilot	34,543	35,825	3.71
Maintenance Chief	43,536	47,000	7.95
Mechanic	30,847	33,319	8.01
Medium Jet (13,501 to 35,000 lb)			
Chief Pilot	$53,289	$57,000	6.96
Captain	41,330	43,000	4.04
Copilot	32,538	34,403	5.73
Maintenance Chief	35,955	37,000	2.90
Mechanic	28,821	31,229	8.35
Light Jet (up to 13,501 lb)			
Chief Pilot	$41,256	$45,000	9.07
Captain	36,786	37,516	1.98
Copilot	29,590	29,650	.20
Maintenance Chief	33,543	33,633	.26
Mechanic	27,374	29,630	8.24
Turboprop (all)			
Chief Pilot	$43,369	$47,900	10.40
Captain	34,773	36,680	4.62
Copilot	27,395	24,748	(9.66)
Mechanic	25,844	29,000	12.21
Piston Twin			
Captain	$28,415	$30,100	5.92
Turbine Helicopter			
Captain	$39,104	$40,658	3.97

Gulfstream G-II/III

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$84,797	$91,010	7.32
Median	72,663	75,500	3.90
Low	52,757	55,300	4.82
Captain			
High	$73,577	$74,000	0.52
Median	56,971	57,820	1.49
Low	43,469	39,300	(9.59)
Copilot			
High	$47,785	$47,750	(0.07)
Median	41,087	43,120	4.94
Low	28,520	30,000	5.18
Maintenance Chief			
High	$51,108	$56,000	9.57
Median	48,632	53,000	8.98
Low	35,550	39,000	9.70
Mechanic			
High	$44,004	$47,000	6.80
Median	33,080	35,100	6.10
Low	22,136	24,000	8.42

Canadair Challenger 600/601

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$71,862	$75,000	4.36
Median	62,437	60,000	(3.90)
Low	48,276	51,500	6.67
Captain			
High	$57,825	$62,000	7.22
Median	46,637	49,000	5.06
Low	35,882	39,000	8.68
Copilot			
High	$35,960	$39,000	8.45
Median	32,868	33,600	2.22
Low	28,325	30,000	5.91
Maintenance Chief			
High	$62,154	$60,300	(2.98)
Median	41,313	43,000	4.08
Low	35,903	39,000	8.62
Mechanic			
High	$35,803	$37,362	4.35
Median	28,500	30,000	5.26
Low	24,138	22,540	(6.62)

Lockheed JetStar

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$71,223	$76,000	6.70
Median	57,153	60,000	4.98
Low	48,257	51,800	7.34
Captain			
High	$61,997	$62,000	0.15
Median	45,731	46,750	2.22
Low	40,815	44,000	7.80
Copilot			
High	$35,853	$39,000	8.77
Median	30,440	32,900	8.08
Low	29,450	31,000	5.26
Maintenance Chief			
High	$61,697	$62,700	1.62
Median	41,289	45,000	8.98
Low	37,508	36,500	(2.68)
Mechanic			
High	$35,988	$36,500	1.42
Median	28,450	31,250	9.84
Low	22,171	22,600	1.93

Dassault Falcon 50

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$71,862	$76,222	6.06
Median	62,437	68,500	9.71
Low	48,276	52,500	8.74
Captain			
High	$57,825	$59,200	2.37
Median	46,637	50,000	7.21
Low	35,882	37,275	3.88
Copilot			
High	$35,960	$39,000	8.45
Median	32,868	33,680	2.47
Low	28,325	26,000	(8.20)
Maintenance Chief			
High	$62,154	$65,200	4.90
Median	41,313	43,000	4.08
Low	35,903	35,080	(2.29)
Mechanic			
High	$35,803	$36,100	0.82
Median	28,500	30,000	5.26
Low	24,138	21,800	(9.68)

Rockwell Sabreliner

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$77,883	$79,900	2.58
Median	64,972	66,850	2.89
Low	59,087	63,400	7.29
Captain			
High	$58,409	$60,000	2.72
Median	44,628	46,400	3.97
Low	34,559	37,840	9.49
Copilot			
High	$39,581	$41,000	3.58
Median	36,286	38,900	7.20
Low	25,122	26,000	3.49
Maintenance Chief			
High	$47,299	$48,000	1.48
Median	42,347	44,200	4.37
Low	38,376	40,100	4.49
Mechanic			
High	$42,842	$40,000	(6.63)
Median	31,242	32,000	2.42
Low	18,187	19,000	4.47

Dassault Falcon 20/200

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$70,126	$75,000	6.95
Median	57,516	62,000	7.79
Low	52,568	55,000	4.62
Captain			
High	$61,501	$63,250	2.84
Median	47,320	49,120	3.80
Low	38,243	40,000	4.59
Copilot			
High	$46,411	$46,800	0.83
Median	33,421	34,920	4.48
Low	28,359	30,000	5.78
Maintenance Chief			
High	$49,970	$51,000	2.06
Median	40,037	40,127	0.22
Low	34,763	35,600	2.40
Mechanic			
High	$44,368	$45,600	2.77
Median	35,076	35,000	(0.21)
Low	21,207	22,700	7.04

BAe HS 125

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$77,647	$71,000	(8.56)
Median	58,677	63,000	7.36
Low	34,207	37,000	8.16
Captain			
High	$51,955	$56,000	7.78
Median	44,915	48,000	6.86
Low	30,417	33,000	8.49
Copilot			
High	$38,931	$40,300	3.51
Median	29,133	31,800	9.15
Low	20,613	22,000	6.72
Maintenance Chief			
High	$49,437	$52,000	5.18
Median	40,204	40,250	0.11
Low	31,359	33,000	5.23
Mechanic			
High	$36,424	$36,100	(0.88)
Median	27,432	29,000	5.71
Low	18,959	19,500	2.85

Cessna Citation III

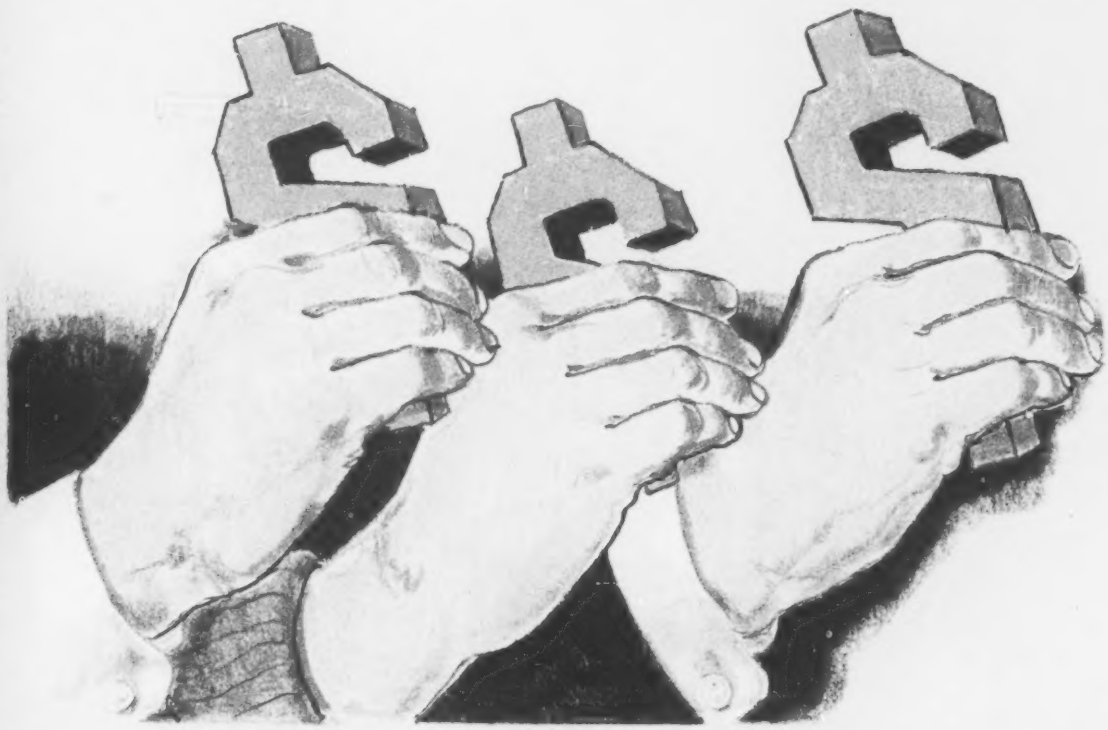
	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$58,258	$60,000	2.99
Median	53,961	55,100	2.11
Low	42,498	45,000	5.88
Captain			
High	$51,014	$51,600	1.14
Median	43,842	48,000	9.48
Low	40,174	37,000	(7.91)
Copilot			
High	$36,778	$40,000	8.76
Median	35,637	36,000	1.01
Low	30,560	33,000	7.98
Maintenance Chief			
High	$45,394	$49,000	7.94
Median	36,932	39,000	5.59
Low	31,692	34,000	7.28
Mechanic			
High	$33,052	$36,000	8.91
Median	27,157	31,500	15.99
Low	21,011	22,700	8.04

Gates Learjet 50 Series

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$56,107	$60,120	7.15
Median	52,174	54,860	5.14
Low	41,146	43,480	5.67
Captain			
High	$55,215	$56,800	2.87
Median	39,872	41,100	3.07
Low	29,303	31,000	5.79
Copilot			
High	$44,473	$43,100	(3.08)
Median	33,735	34,800	3.15
Low	23,251	25,000	7.52
Maintenance Chief			
High	$44,473	$40,240	(9.51)
Median	31,089	33,400	7.43
Low	27,248	29,600	8.63
Mechanic			
High	$36,158	$38,400	6.20
Median	25,270	27,000	6.84
Low	24,244	25,400	4.76

Aircraft Utilization

Aircraft Type	Average Load Factor (1985)	Average Load Factor (1986)	Average Stage Length (1985)	Average Stage Length (1986)	Hours Flown Per Year (1985)	Hours Flown Per Year (1986)
Gulfstream G-II/III	6.33	4.50	1,118	1,014	650	437
Challenger 600/601	3.50	3.50	580	500	450	555
JetStar	3.25	2.60	450	490	375	328
Falcon 50	3.00	4.20	1,000	650	385	620
Sabreliner	3.06	3.00	578	475	424	375
HS 125	3.19	3.27	550	644	529	556
Falcon 20/200	3.75	4.80	607	472	550	497
Learjet 50 Series	3.00	3.10	500	500	300	375
Citation III	NA	3.00	NA	482	NA	450
Westwind 1/2	4.25	4.00	426	416	388	350
Learjet 20 Series	3.34	2.90	430	390	465	410
Falcon 10/100	3.63	3.20	550	500	473	480
Citation I/II	2.73	2.50	366	375	573	500
Heavy Turboprops (all)	8.33	5.40	335	350	291	325
King Air 200/300	3.35	3.50	219	310	414	450
King Air 90/100	3.50	3.10	310	270	548	600
Cheyennes (all)	3.00	3.00	138	225	400	390
Turbine Helicopters	3.57	3.10	43	64	443	429
Piston Twins	1.96	1.50	139	150	297	250



IAI Westwind 1/2

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$55,062	$60,000	8.96
Median	47,151	48,900	3.70
Low	33,617	36,000	7.08
Captain			
High	$46,025	$47,940	4.16
Median	38,839	39,000	0.41
Low	32,806	34,200	4.24
Copilot			
High	$35,700	$36,850	3.22
Median	29,694	30,000	1.03
Low	28,077	28,000	(0.27)
Maintenance Chief			
High	$44,715	$47,800	6.89
Median	34,783	35,900	3.21
Low	25,846	25,900	0.20
Mechanic			
High	$31,503	$32,400	2.84
Median	26,446	28,880	9.20
Low	21,947	22,560	2.79

Dassault Falcon 10/100

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$68,393	$69,450	1.54
Median	52,077	54,900	5.42
Low	49,768	52,600	5.69
Captain			
High	$49,718	$53,300	7.20
Median	40,996	42,750	4.27
Low	34,653	36,870	6.39
Copilot			
High	$43,140	$45,010	4.33
Median	33,324	33,950	1.87
Low	28,449	29,800	4.74
Maintenance Chief			
High	$43,371	$44,000	1.45
Median	33,717	34,900	3.50
Low	32,469	33,740	3.91
Mechanic			
High	$40,288	$40,000	(0.71)
Median	32,748	33,000	0.76
Low	27,880	28,950	3.83

Gates Learjet 20 Series

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$51,745	$54,900	6.00
Median	39,787	41,800	5.00
Low	36,279	38,000	4.70
Captain			
High	$47,236	$48,950	3.60
Median	30,232	31,800	5.10
Low	26,143	28,000	7.10
Copilot			
High	$48,152	$45,000	(6.50)
Median	29,074	30,000	3.18
Low	26,211	27,500	4.91
Maintenance Chief			
High	$38,143	$40,000	4.86
Median	28,528	29,000	1.65
Low	27,978	28,000	0.07
Mechanic			
High	$36,922	$37,840	2.48
Median	25,200	26,900	6.74
Low	21,816	22,850	4.73

Cessna Citation I/II

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$52,380	$57,000	8.82
Median	41,256	44,000	6.65
Low	37,105	38,000	2.41
Captain			
High	$45,104	$48,325	7.14
Median	36,786	38,000	3.30
Low	29,068	31,000	6.64
Copilot			
High	$34,032	$29,000	(14.78)
Median	29,590	25,000	(15.51)
Low	22,241	23,000	3.41
Maintenance Chief			
High	$37,101	$39,000	5.11
Median	33,543	35,000	4.34
Low	22,162	24,000	8.44
Mechanic			
High	$29,491	$30,000	1.72
Median	27,374	29,000	5.93
Low	21,174	22,000	3.90

Heavy Turboprop

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$57,732	$60,100	4.10
Median	51,414	53,840	4.71
Low	46,175	47,900	3.73
Captain			
High	$50,318	$51,800	2.94
Median	39,920	41,500	3.95
Low	28,702	30,000	4.52
Copilot			
High	$34,654	$36,400	5.03
Median	33,362	34,890	4.58
Low	26,880	28,000	4.16
Mechanic			
High	$34,688	$36,000	3.78
Median	28,000	30,000	7.14
Low	23,075	24,980	8.25

Beech King Air 200/300

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$54,356	$58,360	7.36
Median	48,132	45,000	(6.50)
Low	33,274	35,000	5.18
Captain			
High	$43,149	$46,200	7.07
Median	35,654	38,000	6.57
Low	29,970	32,000	6.77
Copilot			
High	$34,881	$36,500	4.64
Median	27,575	29,000	5.16
Low	25,209	25,000	(0.80)
Mechanic			
High	$38,738	$40,117	3.55
Median	25,740	28,000	8.78
Low	23,058	22,880	(0.77)

Beech King Air 90/100

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Chief Pilot			
High	$50,033	$52,000	3.93
Median	43,166	44,860	3.92
Low	36,754	38,000	3.39
Captain			
High	$35,768	$38,000	6.24
Median	33,019	35,100	6.30
Low	28,618	29,725	3.86
Copilot			
High	$31,497	$33,000	4.77
Median	25,527	27,200	6.55
Low	23,043	24,800	7.62

Mitsubishi MU-2

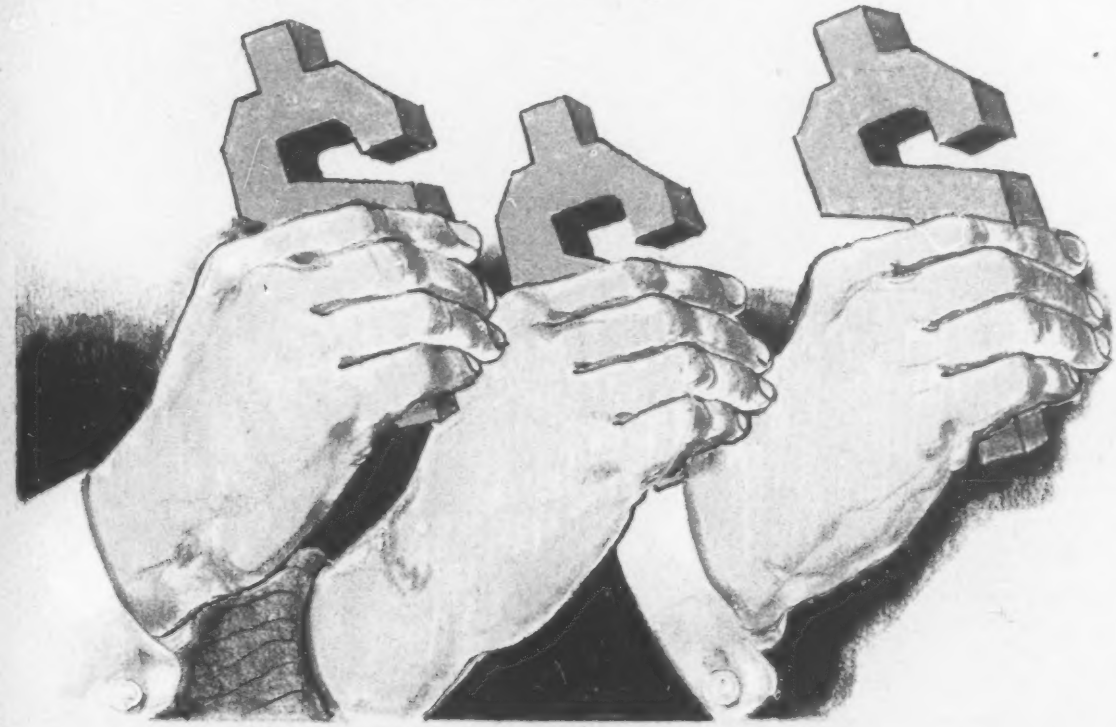
	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	$38,033	$39,900	4.90
Median	31,622	32,400	2.46
Low	23,116	25,000	8.15
Copilot			
High	$35,568	$37,840	6.38
Median	25,388	26,500	4.38
Low	20,123	21,000	4.35

Piper Cheyenne II/III/IV

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	$38,877	$42,400	9.06
Median	33,650	34,900	3.71
Low	30,843	31,950	3.58
Copilot			
High	$35,783	$36,400	1.72
Median	25,122	26,000	3.49
Low	22,773	24,000	5.38

Cabin Class Fiston Twins

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	$36,973	$37,030	0.15
Median	28,415	30,100	5.92
Low	20,381	22,000	7.94



Aerospatiale AStar

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	$43,294	$46,500	7.40
Median	33,707	33,000	(2.09)
Low	29,309	31,700	8.15

Agusta 109A

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	$40,105	$42,000	4.72
Median	35,530	37,200	4.70
Low	32,839	34,880	6.21

Bell 206

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	$66,886	$49,500	(25.90)
Median	39,952	42,800	7.12
Low	31,646	33,750	6.64

Bell 222

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	$44,437	$46,080	3.69
Median	41,621	43,000	3.31
Low	36,615	38,000	3.78

McDonnell Douglas 500

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	$39,011	$41,000	5.09
Median	35,714	37,800	5.84
Low	30,898	32,400	4.86

MBB BO-105

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	$52,767	$50,100	(5.05)
Median	41,134	42,870	4.22
Low	31,443	33,660	7.05

Sikorsky S-76

	1985 Reported Salary	1986 Reported Salary	% Increase (Decrease)
Captain			
High	$50,798	$53,000	4.33
Median	42,497	45,800	7.77
Low	27,478	28,000	5.53

Flight Department Managers

(Manages more than five aircraft; fleet mix of heavy jets, medium jets and helicopters; more than 10 pilots.)

1986 Reported Salary	
High	$112,400
Median	93,000
Low	82,000

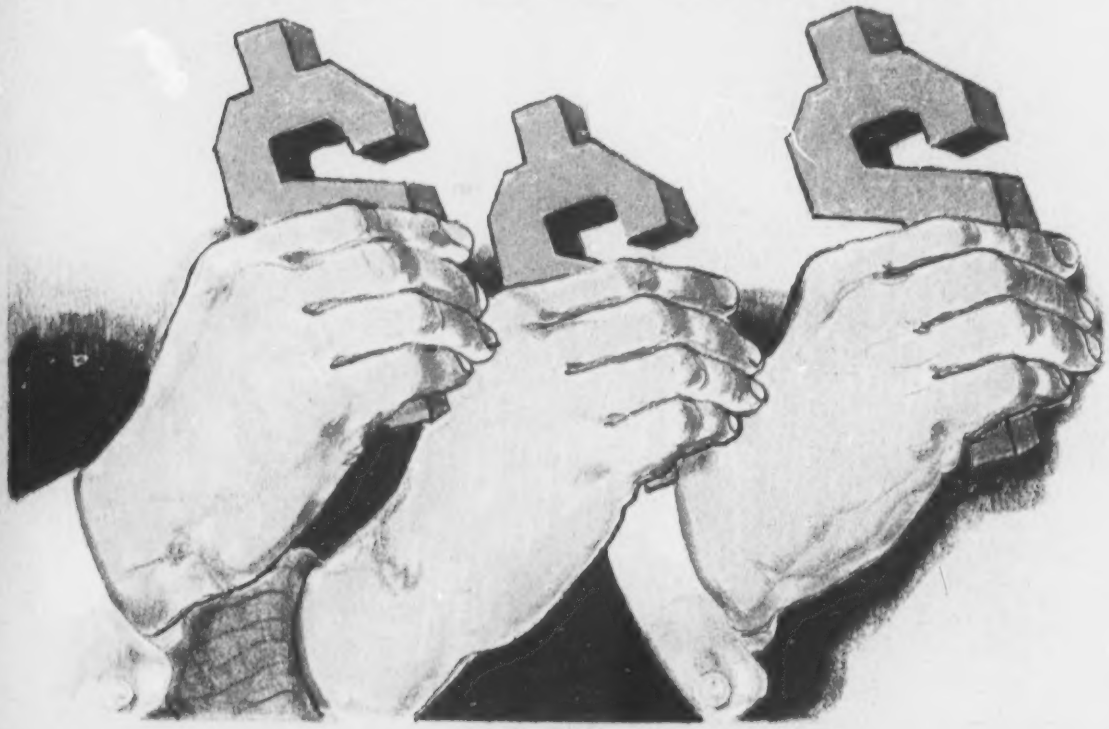
(Manages more than four aircraft; fleet mix of heavy jets and medium jets; more than 10 pilots.)

1986 Reported Salary	
High	$90,000
Median	74,000
Low	49,000

(Manages more than three aircraft; fleet mix of heavy jets and turboprops; more than 10 pilots.)

1986 Reported Salary	
High	$88,000
Median	72,400
Low	50,000

As in past years, this survey was conducted by telephone. B/CA has a working base of over 100 control flight departments that we try to contact each year. We have made no effort to qualify any of those flight departments contacted as being representative of industry pay scales or fringe benefits. Originally these flight departments were selected randomly by geographical area and type of equipment operated. To insure confidentiality the names of responding companies are separated from the response itself. We believe that a telephone survey affords greater accuracy and eliminates any ambiguities.



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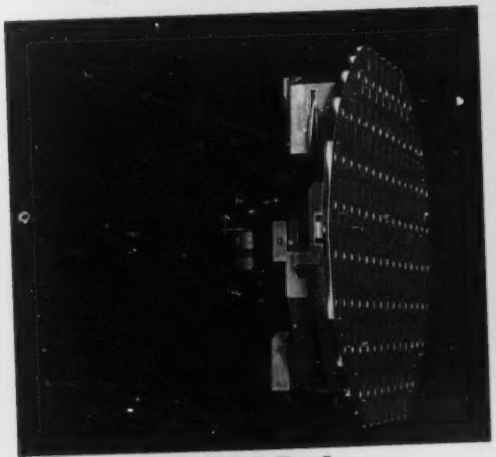
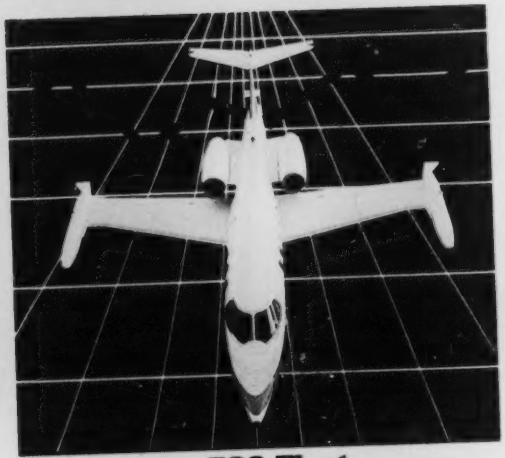
Business and commercial Aviation

Mobil Oil's Corporate Dash 8



Collins TWR 850 Radar



The Fortune 500 Fleet

Contents

December 1986

Editorial ____ 11
Avoiding Delays: While delays are a significant problem at major hubs, smart executives know how to avoid them.

Letters ____ 16
A Mutual Cause; Obvious Talent

Intelligence ____ 21
TCA Operating Requirements To Change; Customs Is Revising Overflight Permit Rules

Reflections ____ 35
A Saturday in Chester: In order to break a world record, workers at a British factory built a complete bomber in just 24 hours.

Mobil Oil's Corporate Dash 8 ____ 40

The first company to operate the corporate variant of de Havilland's latest regional transport typifies how business can be served by this class of aircraft.

Business Aviation and the *Fortune* 500 ____ 48
Once again, B/CA takes a look at business aviation within the *Fortune* 500 companies, and the results are very interesting.

Collins's New TWR 850 Radar ____ 54

This firm's first Concept 4 Doppler turbulence detection radar uses more than power to get information for the operator.

Evaluating Personnel for a Stronger Staff ____ 58
Interviews and evaluations should be more than question-and-answer sessions if you're looking to hire and keep good employes.

The Winter Checklist ____ 67
B/CA has organized into a convenient format the multitude of tasks that should be accomplished to prepare for the winter season.

CLEARANCE DELIVERY

Business & Commercial Aviation serves as the center for several forms of communication with the business aviation community. Although the magazine is our primary focus, B/CA's staff is responsible for writing and producing *Show Dailies* at the NBAA Convention, the HAI Convention, the Paris Air Show, the Farnborough Air Show, the Hannover Air Show and the Singapore Air Show. We also produce the *FBO Information Pak,* which presents a wealth of user information about leading fixed base operations throughout the United States, as well as several special publications such as *Inside,* operational and management seminars such as Archie Trammell's Weather Radar Seminar and the NBAA-B/CA seminars on various management subjects.

Included within this issue of B/CA opposite page 66 is our latest offering, *Management Mobility Report.* Conceived by B/CA Publisher David W. Ewald, *Management Mobility* features interviews with five leaders of American industry concerning why they use business aircraft. We believe that you will find their reasons, frankly stated, to be fascinating testimonials to the work of business aviation.

In addition to sending the first issues of *Management Mobility* to all our subscribers, B/CA is distributing the publication to approximately 50,000 leading executives associated with about 36,000 companies. While some of those recipients operate aircraft, the

Keeping an Eye Out 72

We had best keep abreast of the changes that are likely to come about as our legislators attempt to fix the antiquated see-and-be-seen ATC system.

How Much Flight Time Is Enough? 76
The statistics on pilot-error accidents provide unbiased information about when aviators should seek recurrent training.

Taxes & Accounting 80
A Sales Tax Saga: A Pandora's box was opened recently when the New Jersey Tax Court won a case that focused on the legitimacy of a Delaware corporation.

Fit for Flight 83
Stress in Aviation: Rather than let stress get the best of you, turn it to your advantage by following a few simple guidelines.

Point of Law 84
Can I Be Sued?: Few people realize all that's involved in bringing a case to court, not to mention the cost incurred even if they win. Here's a simplified explanation.

Cause & Circumstance 88
"Delta, Go Around": See and avoid applies to wind shear as well as to traffic.

Product Analysis 90
Three Timely Tapes

B/CA Observer 92
Avanti Flying Toward 1987 Certification

Calendar 95

Washington 101
Thanks a Lot, Congress: Not only did the 99th Congress wait until the last minute to complete its important work, it did little to help the aviation industry.

Hardware/Software 102
Currency by Objective: The idea behind this concept is to put your flight hours to work for you by accomplishing specific maneuvers during that time aloft.

Greenhouse Patter 104
Gather 'Round, Ye of Little Faith: Although several years of aviation history seem to have been repeated, Torch finds reason to have faith in the future of this industry.

Marketplace 103

Advertisers' Index 98

MANAGEMENT MOBILITY

vast number of the executives who will receive the publication are not intimately familiar with business aviation.

We are optimistic, however, that after those businessmen and women see the positive statements from fellow executives in favor of business aviation, they too will explore its advantages.

B/CA is pleased to be in a position to spread the good news of business aviation to executives who have not yet experienced the benefits of greater management mobility via business aircraft.

THE COVER

Mobil's Corporate Dash 8 was photographed by Staff Editor Alan Staats. Collins supplied the picture of its TWR 850 radar. Alan Staats and B/CA's art department created the art for the *Fortune* 500 article.

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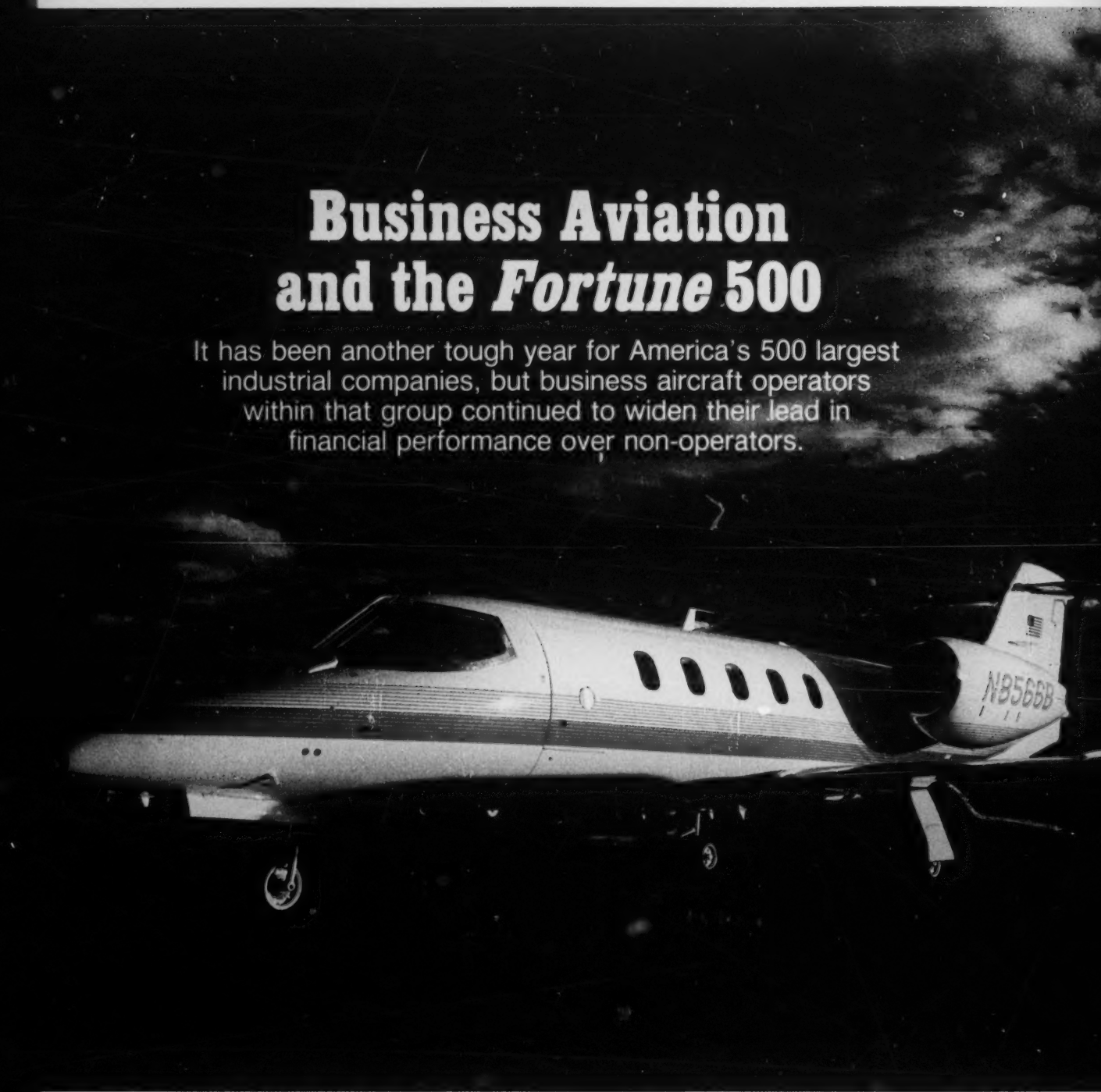
Business Aviation and the *Fortune* 500

It has been another tough year for America's 500 largest industrial companies, but business aircraft operators within that group continued to widen their lead in financial performance over non-operators.



by Fred George

In 1985, the standard measures of the financial performance of America's 500 largest industrial corporations were as flat as a Kansas prairie: Sales growth was a lackluster 2.8 percent, profits were down from 1984, and production assets were under utilized.

With such overall mediocre results, it might be easy to overlook the exceptional return to investors achieved by individual companies, many of which operate business aircraft. But before focusing on such top-flight performers, it may be helpful to put the standard indices of economic achievement in proper perspective.

It is readily understandable why Wall Street analysts attach great importance to gross sales, net income and stock appreciation: Their immediate income is tied to the confidence and con-

tinued investment by their customers. But during the 1980s, the best and brightest leaders in Corporate America have been restructuring their firms, merging them with other companies or prowling through the market for acquisition candidates. And for many companies, the dynamic reorganization of firms by top management has yet to result in a tangible payoff for investors.

Photography by Alan Staats

Undaunted in 1985, chief executives pressed on with stringent cost-containment and productivity improvements. Some conservative firms bought back large chunks of their own stock in order to push up the price per share. Other companies that feared hostile takeover attempts courted suitors for leveraged buy-outs. And yet another group went on the offensive, looking to buy weaker companies.

In the wake of the stress and strain within the ranks of America's 500 largest industrial corporations, chief executives have been obliged to operate their companies as tough, lean and competitively as possible. This back-to-basics approach might lead some observers to conclude that company aircraft would be among the first assets to be liquidated, especially shortly after mergers or acquisitions.

This has not generally been the case, although 21 business aircraft operating companies have been acquired by other firms in the last two years. According to statistics on the *Fortune 500 fleet supplied by Aviation Data Service, Incorporated (AvData) of Wichita, the dynamic restructuring of the nation's largest industrial corporations didn't have a major, adverse effect on the number of turbine aircraft operated in 1985 compared to the previous year. The Fortune* 500 fleet declined by only 10 in 1985, with 1,417 turbine aircraft being operated by those firms.

Although less than half of the *Fortune* 500 showed profit increases for 1985 and a record 70 companies lost money, most of the business aircraft operators seem to be following the lead set by companies such as Chrysler and Wickes, whose dynamics leaders Iacocca and Sigaloff elected to use company planes to help their firms avert economic apocalypse.

A Smarter Move Than Ever

The wisdom of operating business aircraft appears to offer a greater advantage today than it did last year, according to this year's AvData statistics. We note with considerable interest that the economic performance differential between operators and non-operators has *widened* compared to our December 1985 report.

Looking at Figure 2 it once again is apparent that aircraft operators achieved better performance than non-operators, although compared to last year non-operators marginally edged out their business flying competitors in one area: sales growth. But, when income and productivity are measured, the aircraft operators achieved healthy advantages over non-operators in three key areas: net income as a percent of sales (42.8 percent higher), net income per employe (78.0 percent higher) and net income as a percent of stockholders' equity (21.8 percent higher).

Figure 2 also reveals that business aircraft operators achieved 18 percent more income in terms of *return on assets* compared to non-operators, showing an unmistakably strong correlation between teaming company planes with other assets in order to produce a better *return on investment.*

But composite statistics regarding the economic performance of business aircraft operators among the !Fortune 500 tend to obscure the individual contributions of star performers specifically named by *Fortune* magazine. For example, two furniture manufacturers that operate business aircraft—Herman Miller (ranked 469) and Hon Industries (ranked 478)—surged into the ranks of the *Fortune* 500 last year. As shown in Figure 3, those two firms, plus one other business aircraft operator among the furniture makers, decisively outperformed the non-operator in the group—despite the latter firm's having more employes, more assets and more stockholders' equity than any of the former companies.

The shake-out in the computer industry continued last year, making the overall performance of the computer makers among the *Fortune* 500 poor. However, *Fortune* noted that IBM had the highest profits among any of the *Fortune* 500 companies, while Digital Equipment Corporation introduced two new VAX computers that were immediate hits. These two business aircraft operating companies helped the fliers within the computer and office equipment group soar into the black while the non-operators sank in a sea of red ink.

Unfortunately, not all business aircraft operators performed as well as the computer makers. Non-operators in 12 of the groups fared better than their business aircraft competitors, including such traditional strong classifications as oil companies, mining firms, transportation equipment builders and aerospace companies, many of which faced increased foreign competition and declining Middle Eastern and Latin American markets.

Even three of the four toy makers/sporting goods producers, all of which are non-operators, scored higher using the traditional benchmarks—income versus sales, number of employes or stockholders' equity—than did the sole aircraft operator in the group.

Getting Back On Top

Fortune surveyed chief executives this year and found that those in com-

mand of the nation's top corporations work longer hours honing the competitive edge of their firms than they did 10 years ago. At present, they put in 59 hours per week, spending more than 13 hours reading correspondence and reviewing reports and almost eight hours on the phone. Not surprisingly, a large part of the surveyed executives' time is devoted to staff meetings and visits to company facilities.

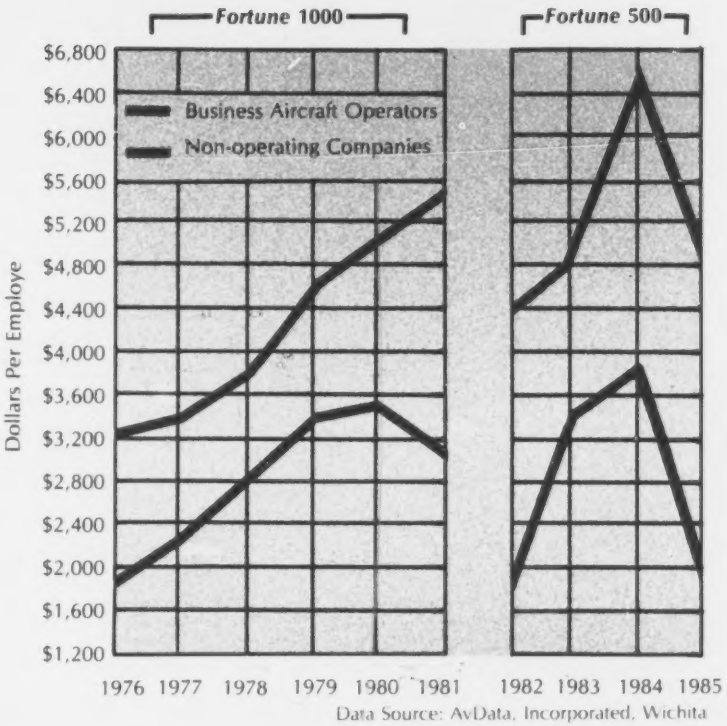
Contrary to the opinions of corporate raiders, these leaders typically own large amounts of their company's stock; thus their personal financial futures are at stake along with the well-being of other shareholders. Over half of the respondents own $1 million or more of their company's stock. Such personal equity helps explain why company heads overwhelming listed maintaining or boosting the bottom line as their highest priority. As a group, the median age of these executives is 58 (a year older than when they were last surveyed in 1976), and six respondents are 70 or older. The average tenure is eight years, but directors appear to be more willing to nominate an outsider to man the helm than in past years. Although promoting from within the organization is still the most common route to the top, many boards have been unable to find a suitable replacement for their CEOs when needed; one out of six top executives were with their companies less than one year prior to taking command. Mergers and acquisitions may account for part of such a trend. The most common route to the top appears to be through marketing or sales positions, with almost a third of the CEO respondents listing that avenue as their main career path.

All of these trends bode well for the future of business aircraft among the *Fortune* 500. In view of the increased time pressures on these more mature CEOs and in spite of radical cost-reduction measures, these industry leaders probably are even more unreceptive now to waiting for a connecting airline flight in some distant hub air terminal when they could have already arrived at their business appointment by using the company plane.

The *Fortune* 500 Fleet

Compared to our last report, the number of aircraft operating companies within the *Fortune* 500 shrank by 3.8 percent, which is a remarkably small number considering the unprecedented number of mergers and acquisitions of late. Actually, some companies with which we spoke are benefiting from such mergers and acquisitions. One such operator told us that the increased

Figure 1 Net Income Per Employe

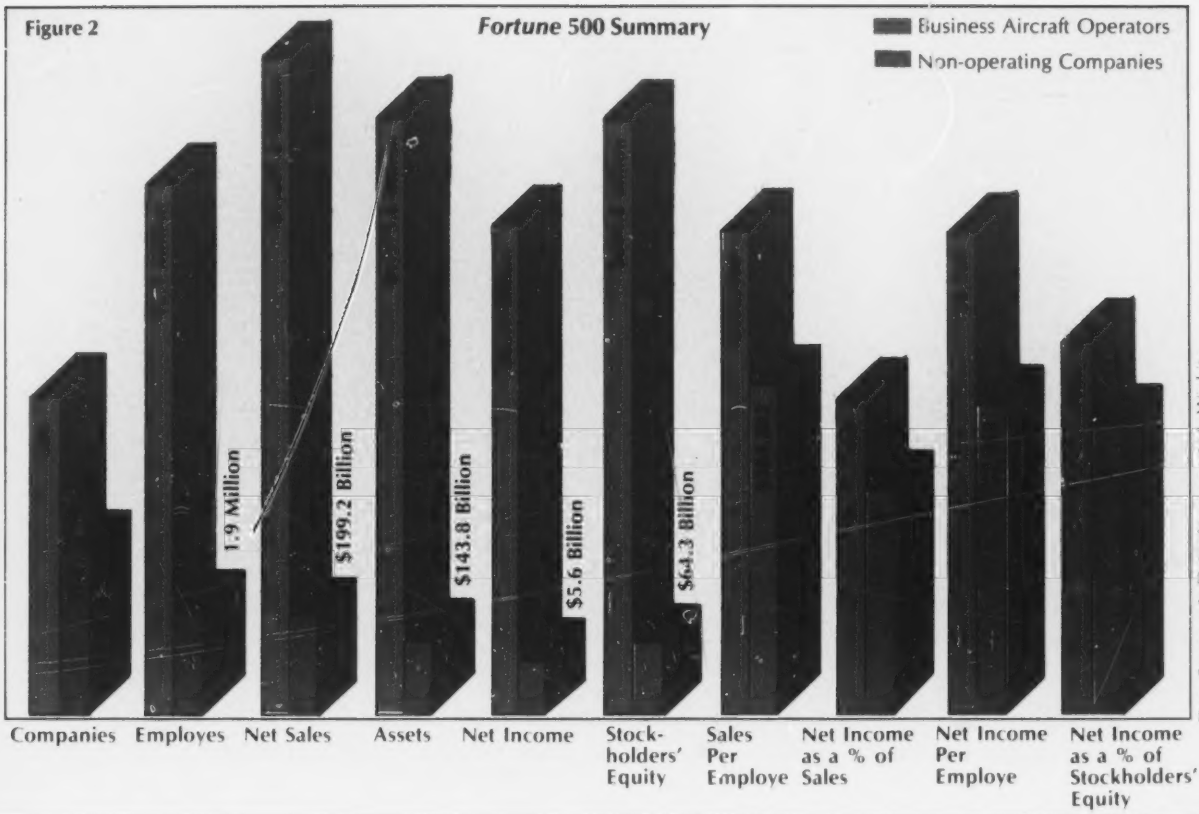


Data Source: AvData, Incorporated, Wichita

Figure 3

SIC	Groups	Companies		Aircraft Operated
		Operators	Non-operators	
10	Mining, Crude Oil Production	11	2	49
20	Food	31	25	94
21	Tobacco	3	1	21
22	Textiles	7	3	13
23	Apparel	5	6	13
25	Furniture	3	1	5
26	Forest Products	24	8	91
27	Publishing, Printing	12	7	39
28	Chemicals	24	18	94
29	Petroleum Refining	25	6	226
30	Rubber Products	8	4	28
32	Building Materials	15	3	37
33	Metals	15	10	43
34	Metal Products	17	10	35
36	Electronics	30	17	143
37	Transportation Equipment	2	2	3
38	Scientific and Photo Equipment	8	8	33
40	Motor Vehicles and Parts	12	4	59
41	Aerospace	14	1	183
42	Pharmaceuticals	13	5	42
43	Soaps, Cosmetics	6	3	18
44	Computers, Office Equipment	9	16	44
45	Industrial and Farm Equipment	26	6	73
46	Jewelry, Silverware	1	0	1
47	Toys, Sporting Goods	1	3	1
49	Beverages	6	3	29
	Average or Total	328	172	1,417

Figure 2



Data Source: AvData, Incorporated, Wichita

Sales Per Employe		Net Income as a Percent of Sales		Net Income Per Employe		Net Income as a Percent of Stockholders' Equity	
Operators	Non-operators	Operators	Non-operators	Operators	Non-operators	Operators	Non-operators
$292,706	$176,341	1.9	7.2	5,547	12,613	4.1	16.6
124,057	129,676	3.3	2.0	4,134	2,568	15.1	12.1
98,622	61,301	9.0	9.0	8,858	5,498	23.8	17.4
69,020	60,483	2.3	-0.1	1,557	-41	6.2	-0.4
49,125	70,578	4.0	2.0	1,958	1,394	13.2	15.3
85,809	58,671	6.3	2.2	5,404	1,317	20.5	8.0
135,166	128,387	3.9	3.6	5,275	4,643	8.4	8.1
107,413	89,270	8.4	9.0	9,064	7,993	18.3	21.3
134,516	147,696	1.8	3.4	2,374	5,006	4.2	9.6
448,456	436,047	3.3	0.2	14,871	868	10.2	2.2
84,577	99,089	1.1	1.0	939	953	3.5	8.6
103,432	95,457	4.7	-6.1	4,876	-5,846	11.7	-15.5
137,455	116,354	-2.9	-1.7	-4,022	-1,980	-9.6	-2.8
91,994	84,177	4.3	2.8	3,972	2,346	12.0	7.8
80,261	70,968	4.7	2.9	3,756	2,064	11.9	7.4
55,903	116,574	-0.2	4.1	-86	4,753	-0.8	18.0
82,842	77,154	5.3	4.3	4,400	3,308	10.3	8.3
126,686	119,217	4.4	1.3	5,559	1,583	16.4	8.8
93,311	79,887	3.0	7.8	2,802	6,224	5.8	17.9
92,466	96,210	10.2	11.4	9,412	11,004	16.0	23.4
143,880	208,702	3.0	2.1	4,373	4,433	10.3	8.3
97,169	93,749	9.7	-1.4	9,434	-1,333	16.3	-3.7
89,660	91,477	0.7	2.0	611	1,826	1.7	4.4
61,817	0	7.2	0.0	4,432	0	19.1	0.0
96,394	96,955	2.5	8.6	2,368	8,292	13.2	36.3
108,923	109,231	7.6	7.7	8,323	8,388	18.8	19.1
$132,497	**$104,881**	**4.0**	**2.8**	**$5,268**	**$2,959**	**10.6**	**8.7**

Data Source: AvData, Incorporated, Wichita

volume of flight operations will make his company acquire more aircraft in 1987; a second firm upgraded from a light jet to medium jet; and a third company added a heavy jet to its fleet. Overall, the size of the *Fortune* fleet decreased by only about 0.7 percent. But the value and age of those aircraft is improving.

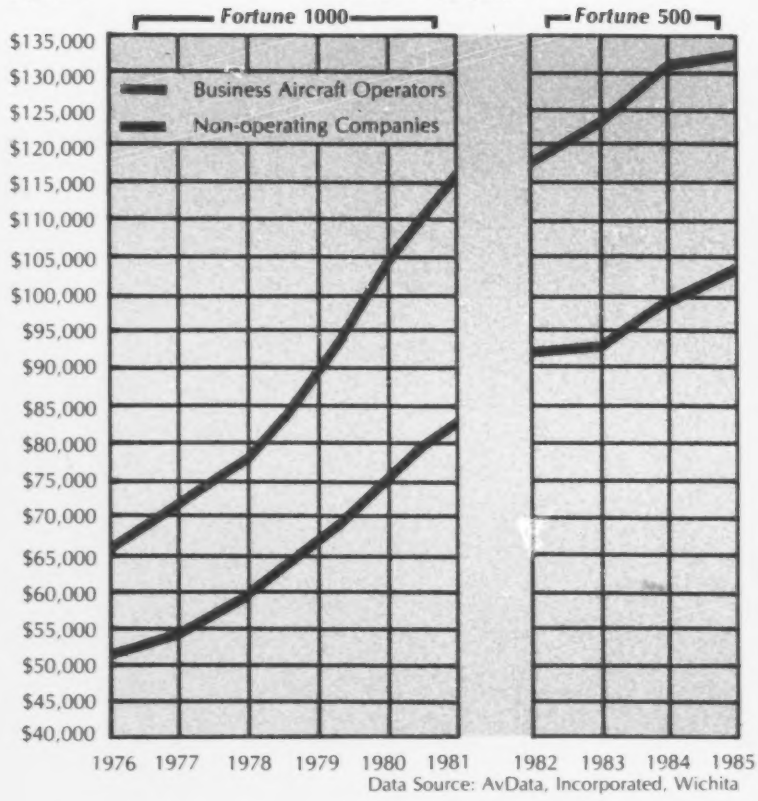
According to AvData, the median vintage of the turbine fleet is now 1978, while the average value has increased by 6.4 percent to $3.02 million per aircraft. Such a rise in the average value of each business aircraft continues the trend of last year's increase of about $200,000 per unit.

Seventy-five of the companies have single-aircraft flight operations, while 80 firms operate two aircraft. Of the 175 other companies, 28 have fleets of 10 or more. The largest turbine fleets (46 aircraft) are operated by Allied-Signal and Chevron, which operates 31 helicopters.

Sharp-eyed readers will note that there has been a significant decline in the number of aircraft when comparing the 1986 report to last December's report. However, last year there were 250 piston-powered aircraft in the tally, which are not included in this year's turbine-only list. As a result of this new method of counting aircraft, more *Fortune* 500 companies operate Gulfstream aircraft (127) than any other make, with Beechcraft in second place (102) and Cessna a close third (100).

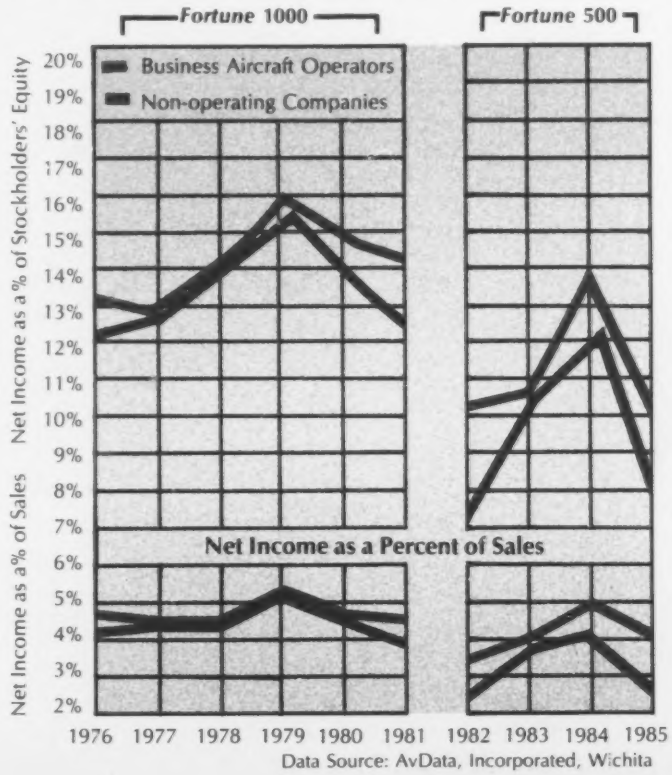
In gross numbers of turbine aircraft, the clear leader within the *Fortune* 500 is again Gulfstream with 215 aircraft, amounting to an impressive 15.2 percent of the fleet. Beech and Cessna are in close competition for second place with 171 and 170 aircraft, respectively. Of the 177 helicopters operated by the *Fortune* 500, more than half are Bells (94). Within the 26 standard industrial classifications, the largest number of *Fortune* companies operating business aircraft are the food processors (31), followed closely by the electronics companies (30). Other substantial numbers of aircraft operators are found among forest-product firms, chemical companies, oil refiners and industrial equipment makers. Next year may well be a turning point for the *Fortune* 500 and the business aircraft industry. Rid of unproductive assets and trimmed down to better match consumer demand, the *Fortune* 500 is ready to battle with all comers in both domestic and overseas markets. And if the 10-year trend continues, don't be surprised if the business aircraft operators within the group emerge with the lion's share of sales, profits and return on investment again in 1987. **B/CA**

Figure 4 **Sales Per Employe**



Data Source: AvData, Incorporated, Wichita

Figure 5 **Net Income as a Percent of Stockholders' Equity**



Data Source: AvData, Incorporated, Wichita